

REMARKS

This Application has been carefully reviewed in light of the Office Action ("*Office Action*") mailed September 17, 2004.

In an Office Action dated November 10, 2003, the Examiner allowed Claims 1-8 and 15-22, rejected Claims 9-11, 13, and 14, and objected to Claim 12. The Examiner indicated that Claim 12 would be allowable if rewritten in independent form and to include all of the limitations of the base claim and any intervening claims. Relying on the Examiner's indication and to put this case in condition for immediate allowance, Applicant canceled Claim 12 and amended independent Claim 9 to include the elements of Claim 12. Applicant did not cancel or amend Claim 12 or Claim 9 to overcome the Examiner's original rejections based upon cited references. Applicant's amendments were made to expedite issuance of allowable claims while reserving Applicant's rights to pursue rejected claims in continuation applications.

However, in the Office Action dated September 17, 2004, the Examiner rejects claims previously indicated to be allowable. Because the Examiner now rejects claims previously indicated to be allowable, Applicant has decided to restore the claims to include their original elements. Thus, Applicant amends Claim 9 to remove elements previously added from originally-filed Claim 12. Applicant also adds new Claim 23, which is identical in substance to originally-filed Claim 12.

In addition, Applicant adds new independent Claim 24. Applicant respectfully requests reconsideration and favorable action in this case.

Claim Rejections – 35 U.S.C. § 112

The Examiner rejects Claims 9-11, 13, and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant's Claim 9, as amended to eliminate elements unrelated to the § 112 rejection, recites:

An optical interface module comprising:
at least one optical line interface for coupling to an
optical line;
a connector for removably coupling the optical interface
module to an optical interface card; and

an electrical/optical converter operable to convert between optical signals communicated by the optical line interface and electrical signals communicated by the connector.

Applicant respectfully submits that this claim language particularly points out and distinctly claims the subject matter which Applicant regards as the invention.

In making his rejection, the Examiner states:

Regarding claim 9, it is not clear which interface is optical [sic] line interface?? [sic] Furthermore, it is not clear what it means by "... a connector for removably coupling the optical interface module to an optical interface card...". [sic] Figure 1 shows connectors 24 for connecting modules 20 to module 18. What does it mean by a connector for removably coupling?? [sic] Furthermore, connectors 24 are connecting the optical interface modules 20 to the conversion module 18, not to the optical interface card 12.

Office Action, at page 2. The Examiner thus opens this rejection by stating that "it is not clear which interface is optical [sic] line interface." However, the claimed optical interface module includes "at least one optical line interface for coupling to an optical line" and no other interfaces. Applicant respectfully submits that one of ordinary skill in the art would consider this language to be clear.

The Examiner then states that "it is not clear what it means by '... a connector for removably coupling the optical interface module to an optical interface card.'" The Examiner also asks the question, "What does it mean by a connector for removably coupling?" However, Applicant has reviewed the claim language and is unable to ascertain any ambiguities. Applicant respectfully submits that one of ordinary skill in the art would consider the claim language to be clear.

Applicant also respectfully objects to the Examiner's characterization of Applicant's figures and specification to the extent that they do not reflect the precise disclosures. Moreover, Applicant respectfully submits that the plain meaning of the claims would be readily apparent to one of skill in the art without reference to the specification or figures. Thus, Applicant respectfully submits that one of ordinary skill in the art would conclude that the language of Claim 9 defines patentable subject matter with at least the required reasonable degree of particularity and distinctness. For at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the § 112, paragraph two,

rejection of Claims 9-11, 13, and 14. If the Examiner wishes to discuss and clarify this rejection, Attorney for Applicant will gladly conduct a telephone interview at the Examiner's convenience.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejects Claims 1-11 and 13-22 under 35 U.S.C. § 103(a) as being unpatentable over various combinations of references. To establish obviousness of a claimed invention under § 103, all claim limitations must be taught or suggested by the prior art. M.P.E.P. § 2143.03. Furthermore, the Examiner must show some teaching, suggestion, or motivation to combine or modify the references either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. M.P.E.P. § 2143.01.

The M.P.E.P. sets forth a strict legal standard for combining or modifying references. According to the M.P.E.P., “[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. § 2143.01. “The mere fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination” or modification. *Id.* (emphasis in original).

Governing Federal Circuit case law makes this strict legal standard even clearer. According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation . . . is an ‘essential component of an obviousness holding.’” *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000) (quoting *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998)). Furthermore, while “evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved, . . . [t]he range of sources available . . . does not diminish the requirement for actual evidence.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Thus, it is a factual question that cannot be resolved on subjective belief and unknown authority, but must be

based on objective evidence of record. *See In re Lee*, 277 F.3d 1338, 1343-44 (Fed. Cir. 2002). Indeed, the factual inquiry whether to combine or modify references must be thorough and searching. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52 (Fed. Cir. 2001).

Claims 1, 6-8, 15, and 20-22

The Examiner rejects Claims 1, 6-8, 15, and 20-22 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,870,637, which issued to Follett et al. ("*Follett*"), in view of U.S. Patent No. 5,572,348, which issued to Carlson et al. ("*Carlson*").

Applicant's independent Claim 1 recites:

An optical line interface assembly for insertion in a slot of a communications rack, the assembly comprising:

a board having a plurality of connectors each formed to couple to an optical interface module, the board further having a network interface and a conversion module linking the connectors and the network interface, the conversion module operable to convert signals between an optical protocol and an electrical protocol; and

a plurality of optical interface modules, each optical interface module having at least one optical line interface operable to couple to an optical signal line, the optical interface modules removably coupled to the connectors to permit replacement of a selected one of the optical interface modules while another of the optical interface modules remains coupled to an associated optical signal line and while the network interface remains coupled to a backplane of a communications rack.

Applicant respectfully submits that *Follett* and *Carlson*, whether taken alone or in combination, fail to teach or suggest every element of this Claim.

Among other aspects of Claim 1, the *Follett-Carlson* combination fails to teach or suggest an optical line interface assembly for insertion in a slot of a communications rack, where the assembly includes both a board having a "conversion module operable to convert signals between an optical protocol and an electrical protocol" and "optical interface modules removably coupled to connectors" on the board. For these claim elements, the Examiner relies on portions of both *Follett* and *Carlson*.

As teaching a board having a "conversion module operable to convert signals between an optical protocol and an electrical protocol," the Examiner relies upon *Follett*'s discussion of a particular mechanism in a circuit module. However, *Follett* simply discloses that the

identified mechanism receives and transmits electrical data. *Follett*, col. 4, lines 3-46. *Follett* does not discuss the mechanism changing the protocol of the electrical data in any way. *See, e.g., id.* Thus, Applicant respectfully submits that mechanism 22 fails to teach or suggest a board having a “conversion module operable to convert signals between an optical protocol and an electrical protocol.”

Furthermore, as teaching “optical interface modules removably coupled to connectors” on the board, the Examiner cites to transmit ports and receive ports discussed in *Follett*. However, *Follett* does not show that the transmit ports or the receive ports are removably coupled to any connectors on any board. *See, e.g., id.* at col. 3, lines 42-57. Furthermore, the Examiner admits that *Follett* fails to teach or suggest “optical interface modules removably coupled to connectors” on the board by stating that “*Follett* does not specifically teach the optical interface modules are removably coupled to the connectors to permit replacement of a selected one of the optical interface modules.” *Office Action*, page 3. Thus, Applicant respectfully submits that transmit ports 23 and receive ports 24 fail to teach or suggest “optical interface modules removably coupled to connectors” on the board.

In an attempt to fill the void left by *Follett*, the Examiner introduces *Carlson*. As teaching “optical interface modules removably coupled to connectors” on the board, the Examiner cites to an optical receiver service module disclosed by *Carlson*. However, the optical receiver service module disclosed by *Carlson* attaches to a motherboard, and the motherboard fails to include a “conversion module operable to convert signals between an optical protocol and an electrical protocol.” *See, e.g., id.* at col. 4, lines 10-23. Thus, the motherboard of *Carlson* fails to teach or suggest the elements of Claim 1. Moreover, *Carlson* does not disclose any other elements that teach or suggest the limitations of Claim 1.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Follett* and *Carlson*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, with regard to independent Claim 1, the Examiner states:

Therefore, it would have been obvious to an artisan at the time of invention to provide connectors or means for the selective removal of optical interface modules of *Follett* from the backplane, as such design is taught by *Carlson*, to easily replace and change the optical interface modules of *Follett* in case of damage or circuit failures.

Office Action, page 3.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

For at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of independent Claim 1. For reasons analogous to those discussed above with regard to Claim 1, Applicant also respectfully requests the Examiner to reconsider and withdraw the rejection of independent Claim 15. Claims 6-8 and 20-22 depend from Claims 1 and 15 respectively. Thus, because they depend from independent Claims shown above to be allowable over *Follett* and *Carlson*, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 1, 6-8, 15, and 20-22.

Claims 9, 13, and 14

The Examiner rejects Claims 9, 13, and 14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,069,522, which issued to Block et al. ("*Block I*"), in view of U.S. Patent No. 4,953,930, which issued to Ramsey et al. ("*Ramsey*").

Applicant's Claim 9, as amended to eliminate elements unrelated to the § 103 rejection, recites:

An optical interface module comprising:
at least one optical line interface for coupling to an optical line;
a connector for removably coupling the optical interface module to an optical interface card; and
an electrical/optical converter operable to convert between optical signals communicated by the optical line interface and electrical signals communicated by the connector.

Applicant respectfully submits that *Block I* and *Ramsey*, whether taken alone or in combination, fail to teach or suggest every element of this Claim.

Among other aspects of Claim 1, the *Block I*-*Ramsey* combination fails to teach or suggest an optical interface module that includes "a connector for removably coupling the

optical interface module to an optical interface card.” For this claim element, the Examiner relies on *Block I*. In general, *Block I* relates to converting electrical signals to and from optical signals. *Block I*, col. 1, lines 10-13. More specifically, *Block I* discloses a particular optical fiber link card that can convert signals. *Id.* at col. 1, lines 13-17.

As teaching “a connector for removably coupling the optical interface module to an optical interface card,” the Examiner refers to *Block I*’s inclusion of a photodetector diode 425 and deserializer means 428 on the optical fiber link card, stating that “there are connectors for connecting the optical interface modules, such as module 425 to the module 428 that is placed on card 101.” *Office Action*, page 5. However, *Block I* does not disclose any connectors for removably coupling photodetector diode 425 and deserializer means 428 to card 101. Furthermore, *Block I* does not disclose that card 101 is removably coupled to an optical interface card. Thus, Applicant respectfully submits that transmit ports 23, receive ports 24, and card 101 fail to teach or suggest “a connector for removably coupling the optical interface module to an optical interface card.” Furthermore, the addition of *Ramsey* fails to remedy the shortcomings of *Block I*.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Block I* and *Ramsey*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, with regard to independent Claim 9, the Examiner states:

Therefore, it would have been obvious to an artisan at the time of invention to incorporate a deserializer such as the one of Ramsey for the deserializer in the optical circuit card of Block in order to provide conversion of data into an ATM mode to transmit a wide range of data types.

Office Action, page 5.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

For at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of independent Claim 9. Claims 13, and 14 depend from Claim 9. Thus, because they depend from an independent Claim shown above to be allowable over *Block I* and *Ramsey*, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 9, 13, and 14.

Claims 2, 3, 16, and 17

The Examiner rejects Claims 2, 3, 16, and 17 under 35 U.S.C. § 103(a) as being unpatentable over *Follett* in view of *Carlson* and further in view U.S. Patent No. 4,850,044, which issued to Block et al. ("*Block II*"). Claims 2, 3, 16, and 17 depend from independent Claims 1 and 15, which were shown above to be allowable over *Follett* in view of *Carlson*. The introduction of *Block II* fails to provide the elements of Applicant's independent Claims 1 and 15 not shown by *Follett* in view of *Carlson*.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Follett*, *Carlson*, and *Block II*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, the Examiner states:

Therefore, it would have been obvious to provide guides in the backplane, as it is taught by Block, to insert and place respective optical interface modules.

Office Action, page 6.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Thus, for at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 2, 3, 16, and 17.

Claims 4 and 18

The Examiner rejects Claims 4 and 18 under 35 U.S.C. § 103(a) as being unpatentable over *Follett* in view of *Carlson* and further in view of U.S. Patent No. 6,345,986, which issued to Follingstad et al. ("*Follingstad*"). Claims 4 and 18 depend from independent Claims 1 and 15, which were shown above to be allowable over *Follett* in view of *Carlson*. The introduction of *Follingstad* fails to provide the elements of Applicant's independent Claims 1 and 15 not shown by *Follett* in view of *Carlson*.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Follett*, *Carlson*, and *Follingstad*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, the Examiner states:

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate pin D-subminiature connectors such as the ones of Follingstad for the connectors in the modified opto-electric module of Follett and Carlson in order to provide connectors with durable design [sic].

Office Action, page 7.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Thus, for at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 4 and 18.

Claims 5 and 19

The Examiner rejects Claims 5 and 19 under 35 U.S.C. § 103(a) as being unpatentable over *Follett* in view of *Carlson* and further in view of U.S. Patent No. 6,570,982, which issued to Weir ("*Weir*"). Claims 5 and 19 depend from independent Claims 1 and 15, which were shown above to be allowable over *Follett* in view of *Carlson*. The introduction of *Weir*

fails to provide the elements of Applicant's independent Claims 1 and 15 not shown by *Follett* in view of *Carlson*.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Follett*, *Carlson*, and *Weir*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, the Examiner states:

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate PCMCIA connectors such as the ones of *Weir* for the connectors in the modified opto-electric module of *Follett* and *Carlson* to benefit from the low cost standard components and to permit the communication with other components.

Office Action, page 7.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Thus, for at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 5 and 19.

Claim 10

The Examiner rejects Claim 10 under 35 U.S.C. § 103(a) as being unpatentable over *Block I* in view of *Ramsey* and further in view of *Follingstad*. Claim 10 depends from independent Claim 9, which was shown above to be allowable over *Block I* in view of *Ramsey*. The introduction of *Follingstad* fails to provide the elements of Applicant's independent Claim 9 not shown by *Block I* in view of *Ramsey*.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Block I*, *Ramsey*, and *Follingstad*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, the Examiner states:

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate pin D-subminiature connectors such as the ones of Follingstad for the connectors in the modified opto-electric module of Block and Ramsey in order to provide connectors with durable design [sic].

Office Action, page 8.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Thus, for at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claim 10.

Claim 11

The Examiner rejects Claim 11 under 35 U.S.C. § 103(a) as being unpatentable over *Block I* in view of *Ramsey* and further in view of *Weir*. Claim 11 depends from independent Claim 9, which was shown above to be allowable over *Block I* in view of *Ramsey*. The introduction of *Weir* fails to provide the elements of Applicant's independent Claim 9 not shown by *Block I* in view of *Ramsey*.

In addition, the Examiner has not cited any evidence of a teaching, suggestion, or motivation to combine or modify the teachings of *Block I*, *Ramsey*, and *Weir*. Instead, the Examiner has merely stated that the teachings of one reference would improve the teachings of another reference. For example, the Examiner states:

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate PCMCIA connectors such as the ones of *Weir* for the connectors in the modified opto-electric module of Block and Ramsey in order to benefit from the low cost standard components and to permit the communication with other components.

Office Action, page 8.

Applicant respectfully submits that this statement does not provide the required evidence of a teaching, suggestion, or motivation to combine or modify the references. This statement represents the subjective belief of the Examiner, does not point to any known authority, and therefore is not based on objective evidence of record. Thus, the Examiner has not provided any evidence of a teaching, suggestion, or motivation to combine or modify the references, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Thus, for at least these reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claim 11.

New Claims

Applicant adds new dependent Claim 23 and new independent Claim 24. Claim 23 corresponds to previously canceled Claim 12. Both Claims 23 and 24 are fully supported by the specification as originally filed. Applicant respectfully requests the Examiner to consider and allow new Claims 23 and 24.

CONCLUSION

Applicant has made an earnest attempt to place the Application in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims. If the Examiner feels that a telephone conference or an interview would advance prosecution of the Application in any manner, the undersigned attorney for Applicant stands ready to conduct such a conference at the convenience of the Examiner.

Applicant submits herewith a check in the amount of \$200 to cover the cost of filing one new independent claim. No other fees are believed to be due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant



Kurt M. Pankratz
Reg. No. 46,977

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Correspondence Address
2001 Ross Avenue
Dallas, Texas 75201-2980
Tel. (214) 953-6987